

# Science Committee Summary

February 8, 2007

Ed David, Chairman

# Overview of Topics

1. Past recommendation responses from HQ
  - Moons of Outer Planets feasibility studies to minimize cost and schedule risks for New Frontiers and Flagship missions (better understand and control costs)
  - Sharing responsibilities between SMD and ESMD for Lunar Precursor Robotic Program (LPRP)
2. SMD update on programs and FY08 Budget Request
  - Progress, org-chart, and challenges within SMD
  - Much discussion on budget (effects of FY07 CR)
3. First Earth Science Decadal Survey
4. Update on upcoming Lunar Workshop

# SMD Highlights

Colleen Hartman

- Earth Science
  - GRACE maps ice mass loss over time
  - SeaWiFS determined global inverse relationship between sea surface temperature and productivity
- Heliophysics
  - STEREO 16x2 instruments operating nominally became operational Jan 23
  - Two launches coming this spring

# SMD Highlights (2)

- Planetary
  - Cassini reveals new rings, outer e-ring created by Enceladus geysers
  - Mars rovers continue into 3rd year of operation
- Astrophysics
  - Nobel Prize! COBE mission - big bang confirmed!
  - HST first 3-D map of dark matter in the Universe

# Issues and Concerns

- Resolve impacts of FY07 CR
- Instrument and mission cost growth
- Additional funding for slip in HST SM-4
- Juno scheduled slip request - extra costs
- Mission launch profile dips in 2010 and 2012
  - Work force continuity concerns (instrument engineers, mission ops, science ops)
- Removal of NPOESS sensors

# Earth Science Decadal Study

Michael H. Freilich

- Major accomplishment to bring together many diverse fields into a common voice
- Organized along Themes
  - Earth science applications
  - Land-use change, ecosystem dynamics and biodiversity
  - Weather (including space weather)
  - Climate variability
  - Water resources and the global hydrologic Cycle
  - Human health and security
  - Solid Earth hazards, resources, and dynamics
- Need for focused set of long base line measurements (30 yrs or more)

*Science goals directly serving societal needs*

# Earth Science Decadal Study

- Developed detailed list of 17 missions to meet science goals
  - NASA missions (14.5)
  - NOAA missions (2.5)
- Cost of implementation is high and will be a challenge to implement given NASA's current budget (\$500M per yr *more* needed)

# Workshop on Science Associated with Lunar Exploration Architecture

Brad Jolliff

- Sponsored by the NAC Science subcommittees, ESMD, and SMD
- Overarching goal: Ensure that NASA's exploration strategy, architecture, and hardware development enable the best and appropriately integrated science activities.
- Tempe AZ; Feb 27 through March 2